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EXAMINER	
WESSENDORF, TERESA D	

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1639	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/582,050	LU ET AL.	
	Examiner	Art Unit	
	TERESA WESSENDORF	1639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 September 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-44* is/are pending in the application.

4a) Of the above claim(s) *1-26 and 35-44* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *27-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 June 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/10/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group IV, Claims 27-34 in the reply filed on 9/29/09 is acknowledged. The traversal is on the ground(s) that MPEP §803 states that if search and examination of an entire application can be made without serious burden, the examiner must examine the entire application on the merits, even though the entire application includes claims to independent or distinct inventions. It is the Applicants' position that it would not be unduly burdensome to perform a search on all of the claims together in the present application. This is not found persuasive because examination of the different and distinct inventions of compounds and numerous methods would be unduly burdensome. The searches extend to the different commercial databases and not only to US and foreign patents. These searches are not co-extensive. Applicants' request to rejoin the claims of Groups II, III and VII i.e., at least Claims 5 to 34 and 37 is noted. However, upon an indication of allowable subject matter, the request will be reconsidered.

The requirement is still deemed proper and is therefore made FINAL.

Claims 1-26 and 35-44 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 9/29/09.

Status of Claims

Claims 1-44 are pending in the application.

Claims 1-26 and 35-44 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention.

Claims 27-34 are under examination.

Specification

The abstract of the disclosure is objected to because it uses the PCT abstract. Correction is required. See MPEP § 608.01(b).

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 27-34 are rejected under 35 U.S.C. 101 because the claimed invention lacks patentable utility.

The claim method of producing a non-cellular nucleic acid library, said method comprising: (a) dividing an initial set of a plurality of separate nucleic acids into two or more pooled collections of nucleic acids having an initial sequence representation profile, wherein each pooled collection includes not more than about 100 distinct nucleic acids; (b) amplifying each of said pooled collections to produce two or more amplified pooled collections; and (c) combining said two or more amplified pooled collections to produce said non-cellular nucleic acid library, wherein said non-cellular nucleic acid library has a sequence representation profile that is substantially the same as said initial sequence representation profile lacks have a patentable utility.

The claimed method of making a non-cellular library from a set of known collections of nucleic acids e.g., EST (expressed sequence tags) produces an intermediate product (library), which do not have a specific, disclosed utility. The court in *Brenner v. Manson*, 148 U.S.P.Q. 689 (1966), expressed the opinion that all chemical compounds/methods are "useful" to the chemical arts when this term is given its broadest interpretation. However,

the court held that this broad interpretation was not the intended definition of "useful" as it appears in 35 U.S.C. §101, which requires that an invention must have either an immediately apparent or fully disclosed "real world" utility. The court held that:

> The basic quid pro quo contemplated by the Constitution and the Congress for granting a patent monopoly is the benefit derived by the public from an invention with substantial utility. . . . [u]nless and until a process is refined and developed to this point-where specific benefit exists in currently available form-there is insufficient justification for permitting an applicant to engross what may prove to be a broad field. . . . a patent is not a hunting license. . . .[i]t is not a reward for the search, but compensation for its successful conclusion. Congress intended that no patent be granted on a chemical compound whose sole 'utility' consists of its potential role as an object of use-testing." *Brenner*, 148 USPQ at 696.

The method has no patentable utility since it simply collects data from a known collection of data and dividing it into smaller portions to obtain the initial compound from which the (fragment) sets are derived/obtained. It is not apparent from the specification Examples any specific utility for the claim method. Even assuming that a library is obtained still the library, an intermediate product, has to undergo screening in the hope that the obtained product has a patentable utility. The claim process of

collecting/compiling products produced from the, if any, has not been refined and developed to the point-where specific benefit exists in currently available form. There is insufficient justification for permitting an applicant to engross what may prove to be a broad field.

The disclosure at e.g., page 40, lines 17-20 states the utility of the EST-based approach of the subject invention for **global** inactivation of host genes, where the subject methodology is useful as a general loss-of-function genetic screen. The above utility is not a specific utility. Thus applicants have only conclude the disclosed general use for its claimed DNA library of plasmids but not specific ones that satisfy § 101. The claimed DNA library of plasmids can be used only to gain further information about the underlying genes. The claimed DNA library themselves are not an end of [applicant's] research effort, but only tools to be used along the way in the search for a practical utility. Applicants do not identify the function for the underlying DNA library of non-cellular nucleic acids. Absent such identification, the claimed library has not been researched and understood to the point of providing an immediate, well- defined, real world

benefit to the public meriting the grant of a patent. The claim is to an intermediate product for use in making a final product that has no specific, substantial and credible utility. See MPEP 2107.01.

> A patent is not a hunting license. . . .[i]t is not a reward for the search, but compensation for its successful conclusion. Further, the Court approved a rejection for failure to disclose any utility for a compound where the compound was undergoing screening for possible compounds the utility of which has also not been identified. Brenner, 148 USPQ at 690.

Thus, it is not readily apparent from the disclosure as to the specific utility of the library produced by the method.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 27-34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s),

at the time the application was filed, had possession of the claimed invention.

Claim 27, for example, is drawn to a method of producing a non-cellular nucleic acid library, said method comprising: (a) dividing an initial set of a plurality of separate nucleic acids into two or more pooled collections of nucleic acids having an initial sequence representation profile, wherein each pooled collection includes not more than about 100 distinct nucleic acids; (b) amplifying each of said pooled collections to produce two or more amplified pooled collections; and (c) combining said two or more amplified pooled collections to produce said non\-cellular nucleic acid library, wherein said non-cellular nucleic acid library has a sequence representation profile that is substantially the same as said initial sequence representation profile..

The specification fails to describe the genus claim method of producing any kind or type of generic non-cellular nucleic acid library of such enormous scope. A claim to such enormous scope should have a corresponding written description that would lead one skilled to the said enormous genus claim. However, the specification at e.g.., page 11, lines 10-13 merely provides definitions for each of the claim term. The detail description at e.g., page 33 is drawn to an EST library obtained from human

genes from IMAGE consortium. The specification also does not describe this consortium from which the EST human genes are obtained. Li et al (US 2002/0168640) at page 8, [0107] states that "... it is important to understand that in any library system encoded by oligonucleotide synthesis one cannot have complete control over the codons that will eventually be incorporated into the peptide structure. This is especially true in the case of codons encoding stop signs…" Due to the high level of DNA binding specificity of transcription factors, each transcription factor will typically bind to a different DNA sequence. In some instances, a related family of transcription factors may bind to the same DNA sequence. Selection of the sequences used in the hybridization probes may be based on the different tfs that one wishes to detect in a sample. This in turn may depend on the type of organism, cell, or disease state one wished to identify and/or monitor the gene expression of. ***It is noted that different organisms will also express different activated transcription factors and the expression level could be biased***. Thus, the general statements in the specification are not an adequate written description of the invention. A written description should be specific, not generic since a genus is highly variant, that would lead a skilled artisan to the invention.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 27-34 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

1. Claim 27 is indefinite as to the metes and bound of the claim "more'. It is suggested to change "more" to -at least-.

2. In claim 29 "of a chromosomal transcript' is recited twice.

3. Claim 34 is vague and indefinite in the recitation of "at least about". It is suggested that "at least" be deleted.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of

section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 27-34 are rejected under 35 U.S.C. 102(e) as being anticipated by Edwards et al (7235381).

Edwards discloses at e.g., EXAMPLE 1 a method comprising preparing mRNA derived from different tissues. In Example 3 Edwards discloses that from mRNA template (initial set as claimed) two strands of cDNA are obtained a first and a second strand of the cDNA. In Example 4, Edwards teaches that the cDNA undergoes size fractionation and fractions corresponding to cDNAs of more than 150 bp were pooled. The cDNA was directionally cloned into the vector. The ligation mixture was electroporated into bacteria and propagated under appropriate antibiotic selection.

Edwards discloses at e.g., Example 7 a method by which 5'ESTs are isolated from other cDNA or genomic DNA libraries. The full-length cDNAs are then separated into several fractions according to their sizes using techniques familiar to those skilled in the art. For example, electrophoretic separation may be applied in order to yield 3 or 6 different fractions. Following gel extraction and purification, the cDNA fractions are subcloned into appropriate vectors transformed into competent bacteria and propagated under appropriate antibiotic conditions. Subsequently, plasmids containing tagged full-length cDNAs are positively selected.

Claim 31 is disclosed by Edwards at e.g., col. 5, lines 15-25, backbone molecules nucleic acids such as integrating nucleic acids, and other vectors or nucleic acids used to maintain or manipulate a nucleic acid insert of interest. Preferably, the enriched 5' ESTs represent 15% or more of the number of nucleic acid inserts in the population of recombinant backbone molecules.

Claim 29 is disclosed by Edwards at e.g., col. 59, the multiple copies result from amplification of a chromosomal sequence.

Claims 33 and 34 are disclosed by Edwards at e.g., col.8, lines 15-25, the term "fragments of EST-related nucleic acids" means fragments comprising at least 10, 12, 15, 18, 20, 23, 25, 28, 30, 35, 40, 50, 75, 100, 200, 300, 500, or 1000 consecutive nucleotides of the EST-related nucleic acids to the extent that fragments of these lengths are consistent with the lengths of the particular EST-related nucleic acids being referenced. In particular, fragments of EST-related nucleic acids refer to "polynucleotides described in Table II," "polynucleotides described in Table III," and "polynucleotides described in Table IV." The present invention also includes the sequences complementary to the fragments of the EST-related nucleic acids.

Claims 27, 30, 32, 33 and 34 are rejected under 35 U.S.C. 102(b) as anticipated by Chengtao et al (Chinese Journal of Biochemistry, 1999.)

Chengtao discloses a method of obtaining from an initial set of malaria epitopes sets of two or more fragments, amplifying said sets of two or more nucleic acid and combining the two to produce the original nucleic acid. See paragraph 2.1.1, Results section, which describes two synthetic chains of fragment I were inserted between *Bcl* I and *Bam*H I of the carrier VR1012 immediately after annealing, resulting in a clone that included the start codon. Using the T4 DNA polymerase or PCR

method, fragments 2, 6, 8 underwent extension and filling in after each corresponding fragment was annealed, and were inserted into the carrier VR1012 after double enzyme digestion by *Bcl* I and *Bam*H or *Bgl* II, resulting in clones that contained fragments 2, 6, and 8. At paragraph 2.1.2 Chengtao discloses the combination of the individual cloned fragments tandemized and further sequencing results proved that the sequence of the constructed polyvalent recombinant DNA is entirely correct by matching with the original set.

Claims 27-28, 30 and 32 are rejected under 35 U.S.C. 102(b) as anticipated by Okazaki et al (Nature, 2002).

Okasaki at e.g., page 568 col. 1, a method useful to detect and classify evolutionarily related groups of domains for which there is a known structural representative. The ancestral domain from each superfamfly represents a genetic building block. These building blocks have been duplicated, recombined to create the proteins that are currently observed in the genome. At col. 2, Okazaki discloses functional proteins less than 100 amino acids in length were annotated only if they showed significant homology to known proteins from other species or members of gene families. On the basis of these stringent criteria, only 376 proteins of less than 100 amino acids were annotated.

Okazaki at e.g., page 571 under the Methods section discloses a method comprising constructing an initial set of library and extracting a genomic region of >100 bases. The sets were paired and amplified. See further page 565, col. 2, wherein Okazaki refers to reference 21 for the pattern of expression.

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TERESA WESSENDORF whose telephone number is (571)272-0812. The examiner can normally be reached on flexitime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Low can be reached on 571-272-0951. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TERESA WESSENDORF/
Primary Examiner, Art Unit 1639